

STUDIES OF THE MEXICAN SUBGENUS *PLATYNELLA*
CASEY (COLEOPTERA: CARABIDAE: AGONINI)¹

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Studies of the Mexican cave carabids of the genus *Mexisphodrus* (Barr, 1965, 1966) led me to a comparison of its species with *Bolivaridius*, described as a genus of sphodrines by Straneo (1957), and *Platynella*, described as a subgenus of *Anchomenus* by Casey (1920). It is probable that neither *Bolivaridius* nor *Mexisphodrus* are "true" sphodrines in the final analysis, since both have the simple right paramere of subtribe Agoni rather than the elongate ones characteristic of the European and Asiatic sphodrines. *Mexisphodrus* does have a sharply truncate, triangular prosternal base similar to that of the sphodrines, but *Bolivaridius* does not. However, the truncate prosternum is also found in a number of other Mexican and Central American "*Colpodes*", and *Mexisphodrus* is perhaps best regarded as allied with other American species.

Mexisphodrus tlamayaensis (Barr, 1966), a winged species with a predilection for caves (San Luis Potosi, Tamaulipas, Veracruz), should probably be excluded from *Mexisphodrus* until a thorough study of the American colpodines has been made; it has the truncate prosternum and colpodine tarsi of *Mexisphodrus* but not the same habitus. Described as piceous in color, it acquires a dark, bluish-black pigment in some habitats, and is doubtless related to some of the species described as *Colpodes* by Chaudoir.

Platynella and *Bolivaridius* share the same generally somber color, vestigial wings, and elongate, subconvex form of *Mexisphodrus*, but lack the truncate prosternum and the bilobed 4th metatarsal segment of the latter. The descriptions of these two groups are surprisingly similar, not only to each other but also to the description of *Anchomenus montezumae* Bates (1878). Thanks to my colleague, Dr. Candido Bolívar y Pieltain, Instituto Politecnico Nacional, Mexico City, I was able to examine topotypes of *Bolivaridius tolucensis* and a paratype of *B. ovatellus*, and to compare them with two specimens of *Anchomenus montezumae* lent to me from the Biologia Centrali-Americana collection by Dr. R. B. Madge, Commonwealth Institute of Entomology, British Museum. Casey's types and associated speci-

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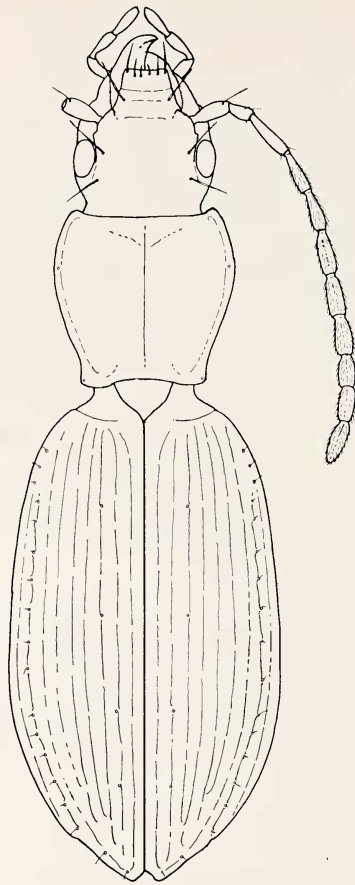


Fig. 1. *Agonum* (*Platynella*) *montezumae* (Bates), length 11.6 mm. Esperanza, Puebla.

mens of *Platynella* were studied at the United States National Museum. Dr. George E. Ball, Department of Entomology, University of Alberta, Edmonton, Alberta, Canada, lent me eight specimens from his extensive collection of Mexican carabids and made valuable comments on an early draft of this paper. Senor Jorge Hendrichs S., Mexico City, clarified the locations of the older collecting sites.

It is now evident that *Bolivaridius* is a junior synonym of *Platynella*, and that *B. ovatellus* is a synonym of *Anchomenus* (*Platynella*)

districtus Casey. *A. montezumae* is closely similar to *A. districtus*, and should be transferred to *Platynella*. In the present unsatisfactory state of classification of Mexican and Central American agonines, I believe it is best to leave *Platynella* a subgenus of *Agonum*, in the widest sense.

Agonum Bonelli

Subgenus *Platynella* Casey

Casey, 1920, p. 23; no type designated, *Anchomenus* (*Platynella*) *districtus* Casey herewith designated.

Bolivaridius Straneo, 1957, p. 81; type species, *B. toluensis* Straneo, by original designation. NEW SYNONYMY.

Description: Length 9-14 mm; color piceous or dark purplish piceous to ferruginous; form subconvex, legs long and slender; microsculpture of head isodiametric, of pronotum transverse, of elytra, which are dull shining, intensely isodiametric, subgranular. Eyes small to moderate, tempora distinctively inflated behind eyes. Pronotum with sides feebly rounded in apical $1/4$ to $1/3$, then oblique and very feebly sinuate to the obtuse, sometimes minutely denticulate hind angles, margins moderately to strongly reflexed; pronotum $3/4$ as long as wide to nearly as long as wide; base trisinate, rounded behind the angles; anterior angles moderate to very prominent; with two pairs of slender, fragile setae in pronotum margin, probably always present in life but apparently easily broken off in dried specimens. Elytra with apices briefly and individually produced, rounded, or bluntly angular; umbilicate series on 8th stria with about 15-17 punctures; usually with four minute, non-setiferous discal punctures on 3rd interval, the first two touching either the 3rd or 2nd stria, the posterior two touching the 2nd stria, first two absent in one species (*toluense*). Antenna rather short, with outer seven segments gradually and progressively compressed, dense pubescence beginning on apical $3/4$ of fourth segment. Tarsi with 4th segment not lobed on any of the legs, glabrous above, setose beneath, including 5th segment of metatarsus; tarsi strigose or smooth above, according to species (strigose in three of the seven known species). Mentum tooth prominent, truncate at the tip. Base of prosternum not sharply truncate. Metathoracic wings vestigial, more or less micropterous. Aedeagus with small basal bulb and small proximal orifice, median lobe arcuate and swollen, apex pointed and briefly attenuate, distal orifice large and opening asymmetrically to the left, the complexly folded internal sac protruding; internal sac with numerous small spines but without

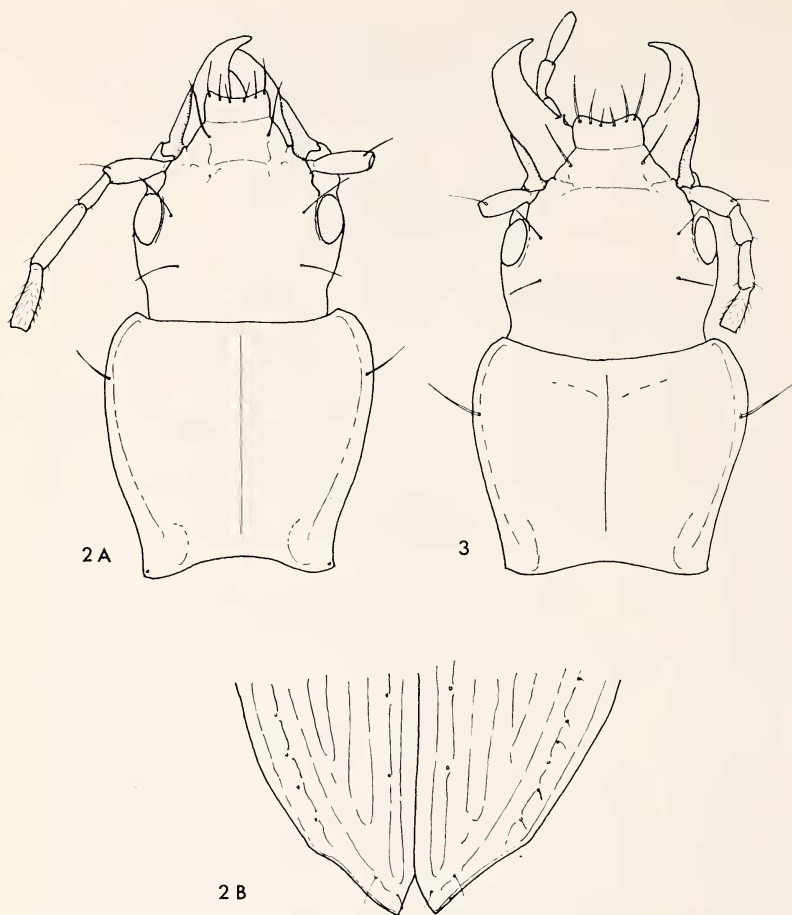


Fig. 2. *Agonum (Platynella) districtum* (Casey). Zempoala, Morelos. A. Head and pronotum. B. Apices of elytra.

Fig. 3. *Agonum (Platynella) toluicense* (Straneo), head and pronotum. Nevado de Toluca, Mexico.

conspicuous sclerites; parameres conchoid, the right smaller. Type species of subgenus: *Anchomenus (Platynella) districtus* Casey (1920, p. 24), here designated.

Discussion: *Platynella* appears to be limited to the central highlands of Mexico, along the Sierra Volcanica Transversal from Michoacan to Veracruz. I have not studied Casey's four species with

smooth tarsi (Casey, 1920, pp. 24-26) except to note that they are apparently valid species and probably belong in *Platynella* rather than in some other subgenus. Three of them — *logicus*, *morelosensis*, and *infidus* — were described from Huitzilac (= "Tres Marías"), Morelos, and were presumably collected by Wickham at the same time he collected *districtus*. These three species closely resemble *districtus* in superficial appearance and body proportions. *Platynella baroni* Casey, a more aberrant species, was described from "Guerrero" without indication of the precise locality. The species with strigose tarsi may be differentiated by the following key.

Key to Species of *Agonum* (*Platynella*) with Strigose Tarsi

1. Pronotum nearly as long as wide; third interval of elytron with four minute punctures 2
 Pronotum $3/4$ as long as wide; third interval of elytron with two minute punctures against 2nd stria in apical third
 *tolucense* Straneo
- 2(1). Eye diameter less than length of scape; pronotum margins strongly reflexed; apices of elytra angulate
 *districtum* Casey
- Eye diameter and scape length subequal; pronotum margins moderately reflexed; apices of elytra less produced and not sharply angulate *montezumae* Bates

Agonum (*Platynella*) *districtum* (Casey), new combination

Figures 2A, 2B, 5

Anchomenus (*Platynella*) *districtus* Casey, 1920, p. 24, type from Tres Marías (=Huitzilac), Morelos, Mexico, in U. S. National Museum.
Bolívaridius ovatellus Straneo, 1957, p. 82; type from Zempoala National Park, Morelos (Huitzilac township), Mexico, in coll. Bolívar, Instituto Politécnico, Mexico. NEW SYNONYMY.

Length of five specimens 11.3-12.1 mm; one of Straneo's specimens was recorded as 14 mm long. Color dark ferruginous, dull shining. Pronotum more than 0.9 as long as wide, greatest width in apical fourth, very shallowly sinuate in basal fourth, margins strongly reflexed; with a pair of anterior marginal setae, the posterior absent in some specimens but probably merely broken off. Eycs small, their diameter less than the length of the scape; tempora behind the eyes longer than eye diameter. Elytra with four discal punctures, apices angulate, sharper than in the two following species. Aedeagus of a paratype of *ovatellus* 1.85 mm long, basal bulb rather long with moderately prominent keel, median lobe arcuate, apex slender and produced.

Distribution: Known only from three localities. *Morelos*: Huitzilac (known as Tres Marias until 1930, according to J. Hendrichs, *in litt.*); Zempoala National Park (Bolívar, May, 1940, in coll. Bolívar, I.P.N., Mexico). *Michoacan*: "1.1 mi. S. Angahuan, cornfield, edge of lava flow, 7300'", August 14, 1967 (Ball, Erwin, and Leech, in coll. G. Ball, University of Alberta, Edmonton, Alberta, Canada). At Zempoala, which is about 7 kilometers west from Huitzilac, the beetles occurred in a forest of *Abies* and *Pinus* at an elevation of 2800-3000 meters. The village of Huitzilac, located at kilometer 53 on the Mexico City-Cuernavaca highway, is near an old volcano (Tres Cumbres) with three peaks which overlooks the valley of Cuernavaca east of the village. The Wickham specimens in the Casey collection were probably collected around this mountain.

Agonum (Platynella) montezumae (Bates), new combination
Figures 1, 4A, 4B, 4C

Anchomenus montezumae Bates, 1878, p. 593; type from vicinity of Mexico City, in British Museum (Natural History).

Platynus montezumae: Bates, 1882, p. 92, pl. 4, fig. 24.

Laemostenus (s. str.) montezumae: Csiki, 1931, p. 812.

Length of six specimens 9.3-13.6, mean 11.6 mm. Color and general form as in *districtum* but a little more slender, humeri more sloping away from the base. Eyes larger, their diameter equal to either length of scape or length of tempora behind. Pronotum similar but margins much less strongly reflexed. Elytral apices feebly produced, rather blunt, not sharply angulate as in *districtum*. Aedeagus of a specimen from Esperanza (Puebla) 1.60 mm. long, a little smaller and less arcuate than in *districtum*, basal bulb not distinctly narrower than median lobe.

Distribution: The three localities from which Bates (1882) reported this species are (1) "near the capital (Flohr)"; (2) "Cumbre del Pelado, San Antonio de Arriba (Salle)", approximately kilometer 37 on the Mexico City-Cuernavaca highway (J. Hendrichs, *in litt.*); and (3) "Esperanza (Höge)", presumably in the state of Puebla. I have seen specimens from the last two localities. Professor Ball's material (in coll. G. Ball, University of Alberta, Edmonton, Alberta, Canada) includes three specimens from "Tlachichuca, Puebla, 8300'", May 29, 1966 (Ball and Whitehead); and two specimens from the Cofre de Perote, "N. slope 10.0 mi. S. Las Vigas, 9600'", August 24, 1967 (Ball, Erwin, and Leech). The Tlachichuca "specimens from the vicinity of Mt. Orizaba were collected in a cornfield" (G. E. Ball, *in litt.*).

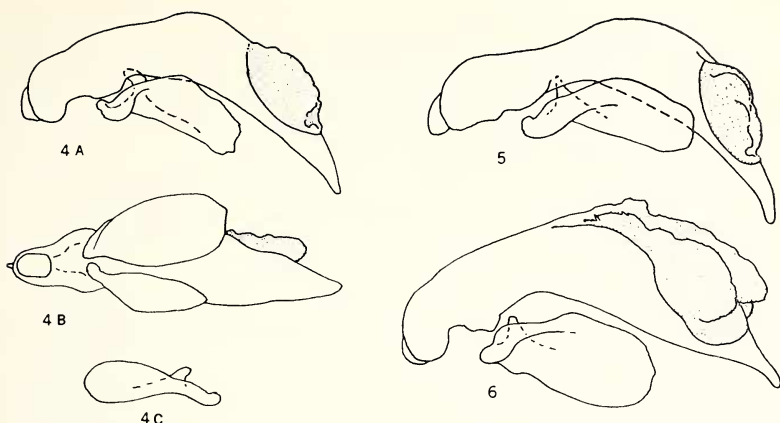


Fig. 4. Aedeagus of *A. (P.) montezumae* (Bates), length 1.60 mm. A. Left lateral view. B. Ventral view. C. Right paramere.

Fig. 5. Aedeagus of *A. (P.) districtum* (Casey), length 1.85 mm, left lateral view.

Fig. 6. Aedeagus of *A. (P.) toluense* (Straneo), length 1.95 mm, left lateral view.

Agonum (Platynella) toluense (Straneo), new combination
Figures 3, 6

Bolivariidius toluensis Straneo, 1957, p. 81; type from the Nevado de Toluca, state of Mexico, Mexico, in coll. Bolívar, I. P. N., Mexico.

Length of six specimens 10.6-11.5, mean 11.0 mm. Color rather pale piceous, elytra dull shining, pronotum shining (microsculpture locally obsolescent, leaving small patches on disc). Eye diameter less than either length of scape or length of the tempora behind. Pronotum transverse, only $\frac{3}{4}$ as long as wide. Elytra depressed, with only the two posterior discal punctures present, on third interval against 2nd stria; apices rounded. Aedeagus of a topotype 1.95 mm, larger than in the other two species.

Distribution: Known only from the Nevado de Toluca, in the state of Mexico, where it is reported to be moderately abundant at altitudes of 4100-4300 meters.

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